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WASHINGTON LETTER.

WASHINGTON, DECEMBER 10, 1889.

Commander Henry F. Picking has been designated to succeed Lieut. G. L. Dyer as Chief of the Hydrographic Office of the Bureau of Navigation. Under Lieutenant Dyer and his immediate predecessor, Commander Bartlett, the methods and results of the Hydrographic Office have been made available and practically useful to the public. In addition to the branch offices at New York, Boston, Philadelphia, Baltimore, New Orleans and San Francisco, new branches have been established at Portland, Oregon, Norfolk, Va., and Savannah, Ga. Other offices will be located as soon as the condition of appropriations will admit. During the past year sixty-six new charts have been published. The general localities covered are in Newfoundland, Nova Scotia, West Indies, Gulf of Mexico, South America, California, and islands in the Pacific and East Indies. In addition, the publication of the great circle sailing gnomonic charts of the North and South Pacific and Indian oceans completes the set of these charts for the great oceans. The charts of the North and South Pacific and Indian oceans will be found particularly useful; that of the North Pacific, for the ocean travel between the United States and the China Sea; those of the Indian and South Pacific in the New Zealand and Australian trade. All who use these charts in connection with a knowledge of the prevailing winds and currents of

the ocean gain daily advantage in the great sea-routes. There are now eight hundred different Hydrographic Office charts, and nearly thirty thousand copies were issued during the past year.

Especial attention is being given by the Office to the subject of marine meteorology. Within the last few years this science has made vast progress, and although ocean storms differ in certain marked ways from those on land, yet it is only a difference of degree. This Division under the charge of Mr. Everett Hayden is now thoroughly systematized, and it is expected that the present permanent force of marine meteorologists will be able gradually to develop Pilot Charts of all the oceans, similar to that now issued monthly for the North Atlantic. Probably no strictly nautical publication has ever had a greater success than this chart. The issue of March, 1888, and the supplements for February and August of the same year were exceptionally popular. The March chart contained diagrams and directions for the use of oil in calming heavy seas, taken from Captain Karlowa's prize essay on the subject. It was distributed amongst all classes of sea-going people, and was the means of saving many lives and much property during the very stormy months of March and April and the early part of May. The use of oil for the purpose of smoothing dangerous seas is becoming universal, but it is believed that much may still be learned as to the most suitable kind of oil and the best methods and appliances for using it for this purpose. The February supplement gave a very complete account of the remarkable cruise of the famous derelict schooner *W. L. White*, which was abandoned off the capes of the Delaware dur-

ing the March "blizzard," and crossed the Atlantic in an erratic track in ten months and ten days. She was reported forty-five times, and for six months remained off the Grand Banks, directly in the track of transatlantic steamers. The August supplement was devoted principally to the history of the raft which broke away from the steamship *Miranda* in December, 1887, and became such a great menace to navigation. It experienced a series of severe Northwest gales which broke it up and drove the scattered portions across the Gulf Stream. The drift of the logs was indicated graphically and discussed in the accompanying text. It afforded an interesting illustration of the direction and force of the prevailing winds and currents in the North Atlantic.

Lieut. J. A. Norris gives in detail in the Annual Report of the Hydrographer for 1889 an account of the expedition which left New York for Vera Cruz in November, 1888, for the telegraphic determination of longitudes in Mexico and Central America. The results of this valuable work are about ready for publication. The same party is preparing for further labor in the West Indies and on the Spanish Main. A similar expedition in 1883 determined the position of Vera Cruz in latitude and longitude; and another in 1884 fixed the position of La Libertad in Salvador.

In the preparation of the new charts for Sunda Strait, Singapore and Rhio Straits, and the passages from Java into the China Sea, the Hydrographic Office has adopted a new system for the spelling of Malay names, which it is proposed to follow in future publications relating to regions for which Malay has principally supplied the nomenclature. The new system is based

on the Dutch orthography of Malay, as found in the latest publications of the Hydrographic Office at Batavia.

The latest Batavian spelling of a Malay name is transcribed in accordance with the following rules :

oe, the vowels *oe* are changed to *u* simply ; as
Batu for Batoe, Sumur for Soemoer, etc.

y is substituted for *j* when this letter is not preceded by *d* or *t* ; as, Payung for Pajoeng, Tamuyang for Tamoejang, etc.

j is substituted for *dj* ; as, Jati for Djati, Pandjang for Pandjang, etc.

ch is substituted for *tj* ; as, Kechil, for Ketjil, Sanchang for Santjang, Chipanchur for Tjipantjur, Chilachap for Tjilatjap, etc.

i is substituted for *ie* in words ending in that syllable, the *e* being mute after *i* ; as, Mandiri for Mandirie, Kali for Kalie, Banyuwangi for Banjoewangie, etc.

In regard to merely descriptive names, as *tanjong* (cape or point), *pulo* (island), *gunong* (mountain), *gusong* (shoal), etc., the practice is in favor of translating them, except in cases where, for reasons of euphony or long usage, the Malayan appellation may be retained. Also, names which have long been written in a form that has become familiar to American eyes will not be changed, although the spelling may not be in accordance with the adopted system, as *Anjer*, *Singapore*, *Banka*, and a few others.

Older Batavian charts are not relied on for correct spelling, as they show many differences from the more recent Batavian charts.

In Malay literature there is a great diversity in the manner of spelling many words, and the pronunciation of the same name varies according to locality. The Malay alphabet consists of thirty-four letters, and the English alphabet does not therefore accurately correspond with it without additional symbols, which it is not desirable to introduce on nautical charts.

It is for these reasons impracticable to prescribe absolutely correct rules of pronunciation, and as the rules should be simple, only an approximation to the true sound is aimed at in the system here given, which, in the main, will be found to correspond with that proposed in the British Admiralty China Sea Directory, Vol. I. 1886, pages v and vi.

PRONUNCIATION OF VOWELS AND DIPHTHONGS.

- a*, as in Java, Banka.
- e*, as in Pernambuco, Mexico.
- i*, as in Chili, Mississippi.
- o*, as in Formosa, Bangkok.
- u*, as in Sumatra, Peru.
- ai*, as in Shanghai, or as I in Ireland.
- au*, as ow in Howard, or as ou in house.
- ao*, but slightly different from au, as in Macao.
- ei*, but slightly different from ai, or nearly as the ie and ye in die or dye.

PRONUNCIATION OF CONSONANTS.

- b, d, f, h, j, k, l, m, n, p, r, s, t, v, w, x* and *z*,
the same as in English.
- ch*, as in Churchill, Chichester.
- g*, is always hard, as in game.

y, as in yard, yes.

ng, as in finger, singer.

gk, as in Nang-ka (the *g* should never be dropped, as in Banka for Bangka, the syllable ending in *g* being usually the root of the compound or derivation).

kh and *gh* are oriental gutturals, as in Khan, Ghazi.

ALASKA.—There are two chapters of interest in Capt. Healy's account of the *Corwin's* cruise in the Arctic Ocean in 1884, recently printed.* (1) Descriptions of Bogoslov Island and the new volcano in Bering Sea, and (2) Narrative account of the exploration of the Kowak River.

According to Surgeon Yeman of the *Corwin's* party, the newly formed portion of Bogoslov Island lies in latitude $53^{\circ} 55' 18''.5$ N., and longitude $168^{\circ} 00' 21''$ W. It is nearly circular in shape, and distinctly volcanic in origin. Two other navigators saw this island in 1883, but the party from the *Corwin* was the first to land. It is not definitely known when the new land arose from the sea, but it was probably in the year 1882.

As seen from the deck of the *Corwin* in 1884, it had the appearance of a dull gray, irregularly shaped hill, about five hundred feet in height; from the sides and summit of which volumes of steam were rising. A closer examination of what appeared to be patches of vegetation revealed only collections of condensed sulphur. No animal life whatever was found; nor could any satisfactory examination of the fissures be made owing to steam,

*Report of the cruise of the Revenue Marine Steamer *Corwin*, in the Arctic Ocean, in the year 1884. 4to, Washington, 1889.

fumes and heat ; it being hot enough in one of the crevices through which steam was escaping to melt the solder fastenings of the thermometer, and expand the mercury sufficiently to burst the bulb. The discharge from the vents was perfectly regular, unaccompanied by much, if any, noise.

The explorations of the banks of the Kowak River are the first ever recorded. The steam-launch started from Cape Krusenstern July 8th and returned August 30th. It traversed 370 miles up river and 204 miles in exploring Lake Selawik and its region. The prime object for which the expedition was sent, viz. : the exploration for a lake which was supposed to exist at the headwaters of Kowak River, or a ready means of communication between the settlements on the Yukon River and those on the shores of the Arctic Ocean, was not accomplished ; but the narrative of Lieut. J. C. Cantwell abounds with interesting details of the examination of the topography of the surrounding country which resulted in several important changes being made in the maps of that section. Ethnological and natural history notes are treated in separate chapters.

Commander C. H. Stockton of the *Thetis* reports that during the cruise of that vessel in Bering Sea, no evidence was seen of the existence of either of the two reported islands southwestward of the Pribyloff Islands, or of a shoal indicated on the chart as doubtful in about latitude $57^{\circ} 30' N.$, Longitude $167^{\circ} 25' W.$; also that the concurrent testimony of several Revenue Marine officers and the commanding officers of the Alaska Commercial Company's steamers is against the existence of this shoal or the islands.

From the same source the following late information relating to the north coast of Alaska, from Point Barrow to Mackenzie Bay is derived. On August 8, 1889, the *Thetis* started on a cruise to the eastward of Point Barrow, which extended as far as Mackenzie Bay. In the main, the contour line of the coast as shown on Hydrographic Chart No. 912 is correct. The coast line, however, is out of latitude in various places, being generally plotted several miles too far to the northward. This is especially the case in the vicinity of Flaxman's Island and the eastern part of Lion Reef. The other more prominent outlying shoals and islands are mostly correct in latitude, but their indicated positions with respect to the main land and their general directions are in many cases erroneous. The soundings are relatively well placed as regards the coast, but the absolute positions are often wrong, as indicated on the chart. Ice is always found along and near the coast between Point Barrow and Herschel Island, the heavier ice resting either upon or in the close vicinity of Tangent Point, Cape Halket, Lion Reef, Manning Point and near Herschel Island. With westerly and northwesterly winds, the pack ice is likely to come down upon the shore at one or all of these points. A northeasterly wind in turn clears the ice off the coast and opens a lane. Vessels going to the eastward after the first week in September, or remaining to the eastward after that time, should be prepared for wintering.

Tangent Point is low and flat, with many small lagoons. It is represented by the natives as being almost entirely the delta of a river, most probably the Ik-puk-puk. The shoal off Cape Halket reported by Captain Knowles,

of the whaler *Pacific*, was not met with by the *Thetis*, but several whaling vessels this year report it at a distance of three miles N. 81° E. from what is represented as an island just inside of Cape Halket. It is stated that this island, which lies close inside and to the eastward of Cape Halket, is connected by a low sandy neck with the main land.

Pelly Mountains were not found by the *Thetis*, and certainly do not exist where placed by the charts. The concurrent testimony of the whaling masters who know the locality, and the natives who hunt in that neighborhood is strong evidence against the existence of these Mountains. In going eastward the Franklin Mountains were the first ones met. From the point of view of the *Thetis* they seemed continuous with the Romanzoff Mountains.

Several islands, one of them about three miles long, extend from Return Reef to the sand island shown off the Colville River, in Harrison Bay. These islands are not shown on the Hydrographic Office chart, and appear to have no name among the natives, and they have been designated "Thetis" islands. They number, as far as seen, four, and run in a general way parallel to the main coast line. The group of small islands extending about east and west off Yarrowborough Inlet are really the terminal islands at the western end of Lion Reef. Being about midway between Lion Reef proper and Return Reef, they have been designated "Midway" Islands. The westernmost of these islands is in latitude $70^{\circ} 28'$ N., longitude $147^{\circ} 53'$ W., and has been named "Cross" Island.

On Collinson Point and on Barter Island are to be found during the summer, rendezvous and encampments

of Eskimo, meeting there for the purpose of trade, similar to the same rendezvous in Kotzebue Sound. Here the eastern and western Eskimo, or more correctly the western and the middle or Mackenzie River Eskimo meet, also the Luces or Rat Indians, who come from the vicinity of the Porcupine and Rat rivers, and who have a principal rendezvous and habitation at the Rampart Station. They are generally Christians and inoffensive. There is no permanent settlement either at Collinson Point or Barter Island.

Herschel Island is about five hundred feet in height, has a rounded outline, sloping gradually from the centre on all sides, and shows an appearance of former glacial action. The vegetation is confined to grasses and small arctic flowers. On the east side of the island there is a small snug harbor, named Pauline Cove. An open bay, named Thetis Bay, on the same side of the island, was found by the *Thetis* and three steam whalers to be a fairly good anchorage with westerly and northwesterly winds. There is a rise and fall of the tide amounting to about three feet in the vicinity of Herschel Island.

The schooner *Norway*, while cruising in July, 1889, in Bering Sea, passed near to the charted position of the "supposed island" southward of the Pribyloff Islands. The weather was quite clear at times, but no island was seen. When the vessel was in Amoughta Pass, Aleutian Islands, about midway between and on a line joining the south point of the eastern extreme of Segouam Island with the north extreme of Amoughta Island, the pass between Tchegoula Island and Amoughta Island was well open, showing Tchegoula Island to be further

to the northward and westward than is indicated on the charts.

BOUNDARIES.—When the Secretary of State in March last submitted to Congress certain documents and maps relating to the undetermined boundary line between Alaska and British Columbia, being the papers and memoranda of Mr. W. H. Dall and Dr. George M. Dawson, referred to in my letter of June 15, 1889, the documents alone were printed, without the maps. The entire report, documents and maps have been recently issued.*

It will be remembered that during the sessions of the Fisheries Conference in Washington in 1887–88, it was suggested that an informal consultation between some person in this country possessing knowledge of the questions in dispute, and a Canadian similarly equipped, might tend to facilitate the discovery of a basis of agreement between the United States and Great Britain, upon which a practical boundary line might be established. Mr. Dall and Dr. Dawson were selected as principals in the consultation.

The inclosures with the Report of the Secretary of State are as follows :

1. Mr. Dall to Mr. Moore, January 3, 1888.
2. Dr. Dawson to Sir Charles Tupper, February 7, 1888.
- 2*a*. Same to same, February 11, 1888.
3. Mr. Dall to Mr. Bayard, February 13, 1888.
4. Same to same, December 19, 1888.
5. Memorandum on the Alaskan boundary, by William H. Dall, A. M.

* Senate Ex-Doc. No. 146, 50th Congress, 2d Sess.

6. Supplementary memorandum on the views of General Cameron as submitted in the letter of Dr. George M. Dawson to Sir Charles Tupper, by William H. Dall.
7. Convention between United States and Russia, April 5-17, 1824.
8. Anglo-Russian treaty, 1825.
9. American-Russian treaty, 1867.
10. Two tracings by the Coast Survey, showing the features of the region on the north shore of Portland Inlet, near its mouth.
11. British Admiralty Chart, No. 2,431, showing the latest British survey of Portland Inlet.
12. Chart 3 of French edition of Vancouver of 1799; covering region north of the 45th parallel of latitude.
13. Chart 7 of same, covering territory between parallels 54° and 57° north latitude.
14. Official Canadian map of British Columbia, 1884.
15. Dawson's Canadian map, 1887.
16. Dawson's Canadian map, 1887, showing conventional lines proposed by Canada.
17. Canadian map, January 23, 1888.

Advices to the latter part of August have been received from the Coast Survey party sent out at the instance of the Secretary of State to make a preliminary survey of the frontier line between the 141st meridian of west longitude at or near where it crosses the Yukon River. The points of destination had not been reached. Captain McGrath writes under date of August 19th that he was then two hundred miles beyond that point on the Yukon, which is half way between St. Michael's

and where he expected to go. The river much resembled the Mississippi. Indian settlements were numerous, the mountains magnificent, and the forests luxuriant. The ground was frozen hard anywhere below ten inches, but in spite of this the weather was so warm that every man was going around in his shirt sleeves.

The parties separated at Fort Yukon on the 2d of July. Turner and his party went up the Porcupine in a steamer—the first one ever seen on that river. Fort Yukon is but a name. There is not a stick of one of its houses left. The English used to think it belonged to them, but a survey showed that it was twenty-five miles within our territory, and as there was no business to warrant occupation, the houses of the Hudson Bay Company were allowed to go to ruin.

Under date of August 21st Captain McGrath writes that he was four or five miles outside of the United States line, and did not expect to get any more letters out this year nor in the spring.

Henry L. Whiting, of the Coast Survey, has made a report as referee on the disputed boundary line between Maryland and Hog Island. The report awards the disputed territory to the State of Maryland. After reviewing the original charter which adopted the high-water mark as the boundary line and the award of the arbitrators in 1877 which changed the line to low-water mark, Mr. Whiting concludes as follows: "I am prepared to say, on the part of the Coast and Geodetic Survey, that, according to the text of the award of the arbitrators of 1877, as descriptive of the boundary line between Maryland and Virginia, no mathematical or physical construction can be put upon the meaning of said descrip-

tion which will locate and define this cognate boundary line and low-water mark in any other place or make it conform to any other course of the river than that which they have ascertained and determined to be the low-water mark on the south shore (right bank) of the Potomac River, as marked and shaded in red upon the coast chart No. 33 of the United States Coast Survey, which is filed as part of the said award and explanatory thereof. This clearly illustrates the intended location of the boundary line and conforms to the terms and meaning of the award."

Information has been received from the joint boundary commission of New York and New Jersey, that it is proposed to erect at once a permanent monument at the turning point in the boundary line between New York and New Jersey in Raritan Bay. The monument will be situated 15.8 miles S. $64^{\circ} 21'$ E. from Great Beds light-house, and will be marked "State Boundary Line, New York and New Jersey." It will consist of an iron beacon surmounted by a ball and spindle, painted white, the whole structure being thirty-seven feet above mean low water, and having a circumference of ripraps, the diameter of which will be 100 feet. Position: Latitude, $40^{\circ} 28' 35''$ N.; longitude, $74^{\circ} 13' 32''$ W.

IRRIGATION.—The Director of the United States Geological Survey has notified the Secretary of the Interior of the selection of the following sites for reservoir purposes, situate in the several States and Territories designated, all of which selections have been approved by the Department:

Clear Lake, Lake County, California, together with

all lands situate within two statute miles of the borders of said lake at high water. Letter dated June 7, 1889.

Independence Lake, Nevada County, California, together with the lands bordering thereon. Letter dated August 5, 1889.

Donner Lake, Nevada County, California, together with the lands adjacent thereto. Letter dated August 5, 1889.

Webber Lake, Sierra County, California, together with the lands bordering thereon. Letter dated August 5, 1889.

Twin Lakes, Lake County, Colorado, together with all lands situate within two statute miles of the borders of said lakes at high water. These lakes are in close proximity to each other. Letter dated July 8, 1889.

Sampitch River, San Pete County, Utah, the lands included in said proposed site being situate in sections 16, 21, 28, 32 and 33, township 18 south, range 2 east. Letter dated July 18, 1889.

Sevier River, Millard County, Utah, the lands therein being situate in sections 2, 3, 10, 11, 14 and 15, township 17 south, range 7 west, Salt Lake meridian. Letter dated July 26, 1889.

Bear Lake, Utah, together with all lands adjacent thereto and within two statute miles of the borders of said lake at high water. Letter dated July 19, 1889.

Bear Lake, Bear Lake County, Idaho, together with all lands situate within two statute miles of the borders of said lake at high water. Letter dated July 19, 1889.

Montana.—Sections 21 and 22 township 9 north range 2 east; section 12 township 9 north, range 2 west; sections 7 and 8, township 9 north, range 3 west; sections

18 and 19 township 18 north, range 6 west; sections 13 and 24, township 18 north, range 7 west; sections 5 and 8, township 22 north, range 4 east; and of township 22 north, range 3 east; all of township 26 north, range 7 west; and section 17, township 25 north, range 6 west. Letter dated July 19, 1889. These lands are located in Meagher, Jefferson, Lewis and Clarke and Choteau counties.

Rio Grande River, above the site of El Paso, N. Mex., as an international dam and reservoir: and public lands on the right bank of the Rio Grande River, between the Mexican boundary line and a point 20 miles above that boundary line and extending 4 miles west of said right bank. Said lands are situate in townships 26, 27 and 28 south, range 2 east, and townships 26 to 29, inclusive, south, range 3 east, Las Cruces district. Letters dated July 13 and 30, 1889.

CONGRESS OF AMERICAN NATIONS.—The discussions of the congress of American nations promise to extend well into the summer of the year 1890. Since the 18th of November time has been chiefly occupied with adjournments and the consideration of rules, which also provide for the appointment of the following committees:

An executive committee of five members, to receive and record nominations of Vice-Presidents from the several delegations to designate the officer who shall preside in the absence of the President; to superintend the publication of the protocols and reports of the proceedings, and to provide generally for the conduct of business;

A committee on customs union, composed of five

members, to consider and report a basis for an American Customs Union, and the advisability of a division of the subject into sections, according to the geographical situation of the countries represented in the conference and the similarity of interests involved ;

Three committees of five members each to consider and report upon the best means of extending and improving the facilities for transportation and postal and telegraphic communication between the several countries represented that border on the Atlantic Ocean, the Pacific Ocean, and the Gulf of Mexico and the Caribbean Sea, respectively ;

A committee of five members to consider and report on the subject of railway communication between the several countries represented ;

A committee on Customs Regulations, composed of five members, to consider and report upon the best method of improving and simplifying customs regulations in the several ports of the countries represented ;

A.—Formalities to be observed in the importation and exportation of merchandise ;

B.—Classification, examination and valuation of merchandise ;

C.—Methods of imposing and collecting fines and penalties for the violation of the customs and harbor regulations ;

A committee of five to consider and report upon the best method of securing uniformity of lighthouse, pilot, and other harbor dues ;

A committee of three to consider and report upon the adoption of a uniform system of weights and measures ;

A committee of seven to consider and report upon the best method of establishing and maintaining sanitary regulations in commerce between the several countries represented ;

A committee of three to report upon the best method of protecting patents, publications, trade marks and right in commerce between the countries represented ;

A committee on extradition, composed of three members, to consider and report upon the establishment of a general convention between the countries represented ;

A committee on monetary convention, consisting of seven members, to report the basis of a monetary convention between the countries represented in the conference ;

A committee on banking, to consist of five members, to report a method of improving and extending the banking facilities and credit system between the countries represented ;

A committee on international law, to consist of five members, to report uniform rules of private international law affecting civil and commercial matters and the legalization of documents ;

A committee on general welfare, to consist of seven members, to report some plan of arbitration for the settlement of disagreements that may hereafter arise between the several nations represented in the conference, and to receive, consider and report upon any other topics that may be proposed other than those included in the invitation from the Government of the United States.

ARCHÆOLOGY.—The recent discovery of archæological remains by Mr. W. H. Holmes, of the U. S. Ethnolog-

ical Bureau, in the vicinity of Rock Creek, a tributary of the Potomac near Washington, is regarded as of high importance. Within a mile of the city limits a quarry workshop of early stone workers has been unearthed, and can be seen to-day almost exactly as it was left by the ancient workmen. The first discovery of these remains appears to have been made in 1887 by an assistant of Mr. Holmes, who was sketching in the vicinity, and who by chance found an implement in the gravel at his feet. He subsequently came upon a number of heaps of refuse in a ravine. In September, 1889, Mr. Holmes obtained the consent of the owner of the property to work upon the premises. After a careful survey he excavated a trench which cut a section directly across the line followed by the ancient workmen. He found a little below the surface a belt of worked material fifty feet wide and on an average about six feet deep, containing upwards of three thousand specimens. It is probable that the entire site contains over a million finished, unfinished and broken implements. Out of fourteen hundred that have been carefully examined there were only twelve that approached anything like perfection. The conclusion is that the perfect specimens were carried to the villages of the workmen to be completed at leisure. No remnants or traces of tools were found.

An examination of the quarry workshop made it apparent that the period of occupation was very long, but Mr. Holmes thinks there is no geological evidence to carry the history of man in this place back beyond the age of the American Indian.

TIERRA DEL FUEGO.—Capt. St. Clair, of the British steamer *Champion*, reports recent information (March,

1889) bearing on the condition and inhabitants of the eastern coast of Tierra del Fuego. Between San Sebastian and Good Success bays natives were seen at most parts of the coast. Some Europeans engaged in gold mining were seen at Nombre Head, about ten miles northward of San Sebastian Bay, where there were several buildings and a flag-staff flying the Argentine flag. Also, near Cape Medio, some Europeans were found searching for gold. At Good Success Bay an Argentine government settlement was found. At Sloggett Bay a gold mining company is established. The coast is visited every three months by an Argentine government vessel.

LA PALLICE.—The artificial port of La Pallice, destined to be one of the great ports of France, and begun by the Government some eight or nine years ago, is rapidly approaching completion. The necessity for this work arose from the impossibility of maintaining in a satisfactory condition the harbors of Bordeaux and La Rochelle. The former is obstructed by a bar which re-accumulates almost as fast as it is dredged away, making it dangerous for large vessels, even at high tide, to attempt an entrance. The latter is quite filled up with sand, and the commerce of the place is now confined to coastwise trade in small steamers and schooners.

La Pallice, before this work was begun, was partly in farms and partly in barren sea-coast. It lies on the west coast of France, about four miles west of La Rochelle, and a railroad has been surveyed to connect it with the latter place. The Compagnie Générale Transatlantique is under a contract with the French Government to establish a regular line of steamers to America as soon as the port shall be open.

There are an outer port, inner basin, locks and dry docks. All the excavations were literally hewn out of rock. The masonry is for the most part composed of stones found on the spot, but the walls are faced with granite. About a mile from the entrance are two light-houses, located respectively on the islands Oléron and Ré. The entrance to the outer harbor is to be marked by light-houses, one on either side. This outer harbor has an area of about thirty-five acres with a depth of water varying from thirty-one to thirty-seven feet at high tide, to sixteen to twenty-three feet at low tide. In the inner basin a uniform depth of from twenty-eight to thirty-four feet of water will be maintained. The land surrounding this basin is reserved for wharves, warehouses, tramways, railroads, and all facilities for handling, moving and storing merchandise. Somewhat over \$4,000,000 have already been expended on these works by the French Government. This amount, which it is understood includes also the acquisition of land, seems like a very moderate expenditure, but when the cost of labor, (58 cents a day) which of itself constituted the larger part of the outlay is taken into account, it will be readily seen that equal results in the United States would have involved at least twice the amount.

CADIZ.—The Department of State is advised that an English company is seeking a franchise to build and operate at Cadiz at fixed tariffs a system of deep-water docks of sufficient capacity to accommodate one hundred large ocean steamers. The proposed tariff reduces the present cost of unloading ships 50 per cent. The parties interested are the Spanish Transatlantic Steamship Company, the Andalusia Railroad Company and

the English Dock Company. The railroad company proposes to run trains from Cadiz to London in fifty-two hours, and the steamship company to send a vessel a week to South America and New York. All cargoes for the interior will be discharged at Cadiz and forwarded by rail; and all goods for export, as well as transatlantic passengers will be taken on there. At present, all large vessels discharge to small boats in the bay, and the mails for America, as well as much of the export business of Spain are taken on at Lisbon.

CAPRERA.—In the month of May, 1889, a new submarine telegraph cable was established between Talamone, west coast of Italy and Caprera Island, north coast of Sardinia.

MOSSAMEDES.—Information has been received that, owing to a late convention between Portugal and Germany, the coast line of Mossamedes, south of the Cunene River, has been handed over to the Germans. A cable having been laid between the Cape of Good Hope and Mossamedes, and continued from Mossamedes to St. Paul de Loanda, the telegraphic circuit of Africa is now complete, and communication with the Cape via the west coast may be more expeditious than by the old route via the Red Sea and Zanzibar. A new line of Portuguese steamers to go as far as the Cape and Delagoa Bay was to start in July. From Mossamedes the steamers are to go to Lisbon in eighteen days. It is proposed to start a railway line to go about two hundred miles into the interior.

The climate of this district, situated on the west coast of Africa, between $13^{\circ} 50'$ and $17^{\circ} 25'$ south latitude, is described as excellent, and on the high plains

behind the Schella Mountains as suitable for Europeans. Fever is uncommon, and contagious diseases only appear when imported in vessels, and rarely take the form of an epidemic. The death rate is very low.

ST. HELENA.—Continued decline from its former prosperity is noted in regard to the historic island of St. Helena. The primary cause is the diversion of traffic by the way of the Suez Canal, although other causes, such as the decrease of the whaling industry and different methods of provisioning ships for long voyages, the reduction of the garrison and consequent diminished disbursements for maintenance by the British Government, have had marked effect. It is reported that many merchants have emigrated for the want of business, and that there is not much occupation left for the few who remain. Nevertheless the native population increases, and there is a large surplus of labor on the island. Within a short time the English steamers have offered passage to Cape Town at half rates to encourage emigration.

KOREA.—The following information relating to Ping Yang inlet and Taton Bay, west coast of Korea, is derived from a report by Ensign F. M. Bostwick of the U. S. S. *Palos*: The village at the head of the bight, between Corries Point and Rocky Point, is known as Chang Ihen. The head of Ping Yang inlet receives the waters of two rivers: the Wuel-tang from the southeastward, and the Tatung (incorrectly Ping Yang on H. O. Chart 224) from the northward. The Tatung is much the larger of the two rivers. The town at the mouth of the Tatung is Chel-To. Referring to British Admiralty Chart No. 1258, Tatong River should be

Taton Bay. No river is there. The head of the bay is at the point marked Haiju (Hae-Chow-Poo).

HYDROGRAPHIC NOTES.—Captain John Van Helms of the steamship *Newbern* reports as follows in regard to San Luis Gonzales Bay and Ometepes Bay, East coast of Lower California :

Willard's Point, the northern headland of San Luis Gonzales bay, is about eight miles N. 69° W. from Point Final. From Willard's Point the bay (Willard's Bay) runs in a north westerly direction five miles, and is then separated from a lagoon by a narrow strip of sand. The lagoon is shallow, and abounds in turtle, fish and game. The bay is apparently free from hidden dangers, and affords shelter in all weather and from all winds. There is a depth of from five to ten fathoms of water, and even near the mouth of the lagoon there is said to be five fathoms within a quarter mile from the shore. A poor quality of water was found near the shore of the northern part of the bay. The rise and fall of the tide in Willard's Bay is said to be fourteen feet. Willard's Point is about two hundred and fifty feet high, and on its extremity there is a solitary tree. The river indicated on the chart as emptying into the southwestern part of San Luis Gonzales Bay, was found to be a dry *barranca*.

Ometepes Bay (named by an exploring party on the steamer *Ometepes*), situated about twenty miles southward of Robinson's Landing, Colorado River, in latitude $32^{\circ} 30' N$, longitude $114^{\circ} 52' W.$, has an entrance three hundred feet wide and a quarter of a mile in length, with a depth of three fathoms of water at half tide. The bay, circular in form, is about three miles wide, and

free from hidden dangers. It is land-locked, and has five fathoms of water. The rise of tide is said to be twenty-five feet. The bay abounds in turtle, fish and game.

Important changes developed by the re-survey in Nantucket Sound, have been indicated upon the charts of the locality issued by the Coast Survey Office since October 31, 1889.

The re-survey of Cape Charles Shoals in 1888, by Lieut. M. L. Wood, U. S. A., assistant in the Coast Survey, has developed a complete change in the shoals off Cape Charles, at the entrance of Chesapeake Bay, and has located a new channel, called the "Northwest channel," across these shoals. This channel has a least depth of twenty-three feet at mean low water. The new hydrography will be shown upon new editions of Coast Survey charts which will be ready about November 15th.

A recent examination of the St. John's River entrance, Florida, by Capt. W. M. Black, U. S. A., Corps of Engineers, has shown marked changes, due to the extension of the north jetty and the work of harbor improvements by the United States Engineers. These changes have been indicated upon the charts issued by the Coast Survey Office since October 25th.

Lieut. T. D. Bolles of the U. S. S. *Monongahela* reports that September 14, 1889, his vessel passed within about four miles of the chartered position of Corinthian Shoal or reef (South Pacific Ocean), indicated in about latitude $8^{\circ} 55' S.$; and longitude $170^{\circ} 15' W.$ The day was bright and clear, with sufficient sea to have caused a break on the surf, but no indications of a shoal were observed.

H.